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Evaluation of habitat quality of *Porphyrio porphyrio* (Purple Swamphen) using Habitat Suitability Index at Talangama tank

C P Ratnayake and S W Kotagama*

Department of Zoology, University of Colombo, Colombo 3

The Purple Swamphen *Porphyrio porphyrio* is commonly distributed in Sri Lanka and confined to tanks and waters, which are either overgrown with reeds or aquatic vegetation. The objective of this study was to measure habitat quality for Purple Swamphen by using the habitat suitability index method in Talangama tank (Colombo District). The tank is situated in a semi-developed urban area where human interference and habitat alternation are significantly high. Thus, the habitat evaluation procedure is important to predict measures of habitat quality of *P. porphyrio* which provides useful information for environmental impact assessments and habitat management. The model synthesizes the habitat use information into a framework appropriate for field application is scaled to produce an index value between 0.0 (unsuitable habitat) and 1.0 (optimum habitat). Life requisites such as cover; food and reproduction were considered to construct the index model. Vegetation cover (SIV_1) and edge index (SIV_2) of each habitat type were estimated; in addition to that water regime was measured (SIV_3). The values of all components of the SIV's were given arbitrarily in natural number according to their importance in relation to the suitability of the habitat. Dependable variables SIV_1, SIV_2 were modified by independent variable SIV_3. The HSI model for *P. porphyrio* is as fallowed, $HSI = (SIV_1 \times SIV_2)^{1/2} \times SIV_3$.

The population of *P.porphyrio* was found highest in paddy field (65), and lowest in home gardens (2). The relationship between the dominant species of vegetation and the number of *P.porphyrio* showed the number of *P.porphyrio* was highest for the composite habitat where large amount of *Cyperus sp* with considerable amount of *Pycerus sp, Eichhornia sp, Fimblistyle sp* and *Nelumbo sp* were present. The edge index suitability ranged from 0.15 to 0.30 with the most suitable edge index (0.15 approximately) in paddy field.

The study was done during the breeding season of *P. porphyrio*; hence only the suitability of reproductive habitat was considered. We can be assumed that *P. porphyrio* preferred composite wetlands as reproductive habitats which are characteristic water vegetations distributed homogeneously within open water. *P. porphyrio* preferred mostly *Cyperus sp* and *Pycerus sp* grasses and *Eichhornia* composition for their reproductive habitat. Though the species is a successful residential wetland bird, this study has revealed that some factors contributed to the deterioration of its habitat quality.

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* fogsl@slt.lk Tel: 011 25342609